



USDA Satellite Imagery Archive

Closing Remarks—October 20, 2008

- This our third year of hosting and organizing a seminar about ResourceSat data.
 - Previous year's seminars can be found at:
 - **<http://www.pecad.fas.usda.gov/remote.cfm>**
- USDA has purchased ResourceSat satellite data on an operational basis for three years
 - 2006, 2007, and 2008
- USDA, and its partners, examined and reviewed ResourceSat satellite data for two years before adopting this data source in its operational agricultural monitoring programs.



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USDA and ResourceSat-1 A WiFS: A short history

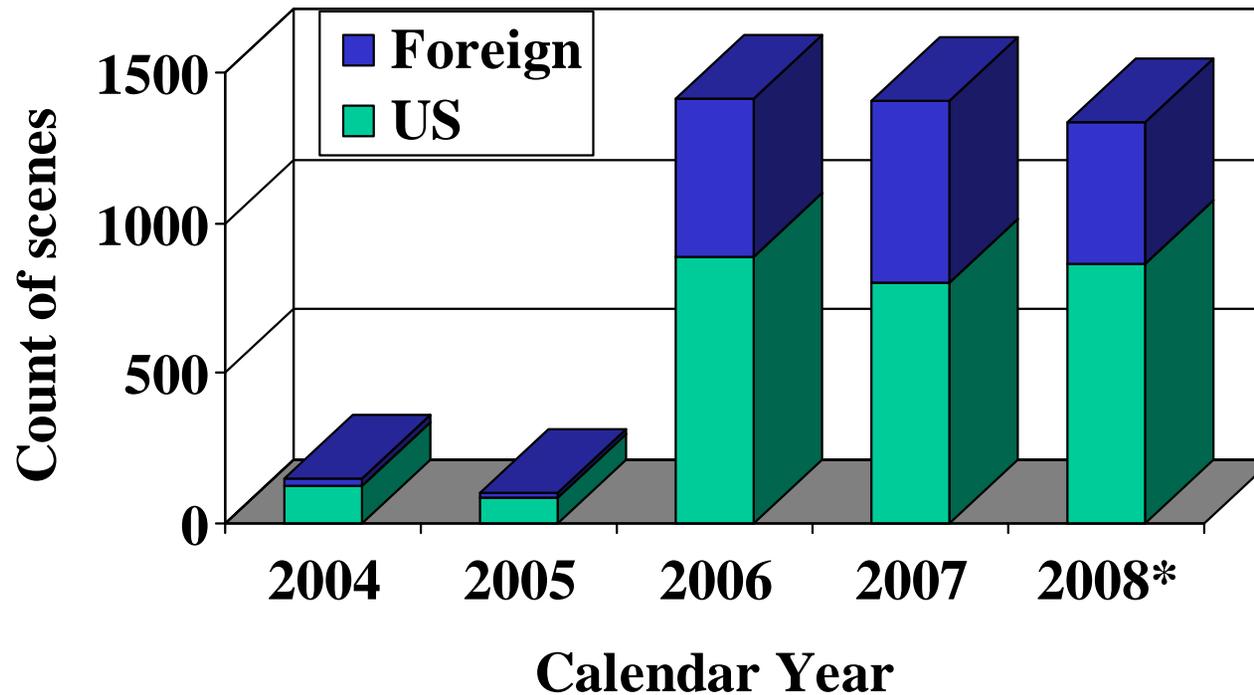
- ResourceSat-1 launched *October 17, 2003*
- Sample data to USDA/NASS *August, 2004*
- NASA begins to characterize A WiFS *November 2004*
- Sample data to USDA/FAS *December, 2004*
- Purchases by USDA/NASS *August, 2005*
 - Problems with data collects (programming and delivery)
- Purchases by USDA/FAS *November, 2005*
- First standing order from USDA/FAS *December, 2005*
 - Contract established with set delivery terms and prices
- First Operational Year *Calendar 2006*
- Second Operational Year *Calendar 2007*
 - Changed pattern of US collects to B & D quads for every 5th row
- Third Operational Year *Calendar 2008*

USDA has 4,401 ResourceSat-1 A WiFS quads



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ResourceSat AWiFS Satellite Data Purchased by USDA



- USDA-SIA has 4,400 AWiFS scenes in its collection.
- USDA purchases ~1,385 scenes per year.
 - 850 for the US
 - (3-year avg.)

*** 2008 data through Sept. 30, 2008**



IRS Resourcesat-1

Launched on October 17, 2003
817 km orbit, following IRS 1-C ground track
Spacecraft lift-off mass: 1360kg
5 year mission
Local time: 10:30 +/- 5 minutes
12 Orbits per day, 101.35 minutes
On-board memory: 152 GB (BOL), 120 GB (EOL)

- **LISS-3: 141 km swath, 23.5 m resolution (all bands).**
 - B2: 0.52 - 0.59
 - B3: 0.62 - 0.68
 - B4: 0.76 - 0.86
 - B5: 1.55 - 1.70
- **LISS-4: 23.5 km (Mx mode) & 70.3 km (mono) swath, 5.8 m resolution (all bands).**
 - B2: 0.52 - 0.59
 - B3: 0.62 - 0.68
 - B4: 0.76 - 0.86
- **AWiFS: 737 km combined swath, 56 m resolution at nadir, 70 m resolution at field edges.**
 - B2: 0.52 - 0.59
 - B3: 0.62 - 0.68
 - B4: 0.76 - 0.86
 - B5: 1.55 - 1.70





Operational Agricultural Monitoring Needs: Better than 16-day Revisit & Large Area Coverage

- Global coverage of agricultural areas should be acquired during the growing season that will enable analysts to identify crops and to assess crop conditions.
 - Spatial resolution at field-level and appropriate spectral bands.
- Observations should be acquired multiple times per month.
 - Observations should be more frequent during critical growing periods, such as flowering.
 - Observations should be frequent enough to assess damage from events.
- ResourceSat-1 AWiFS is suited for this task.

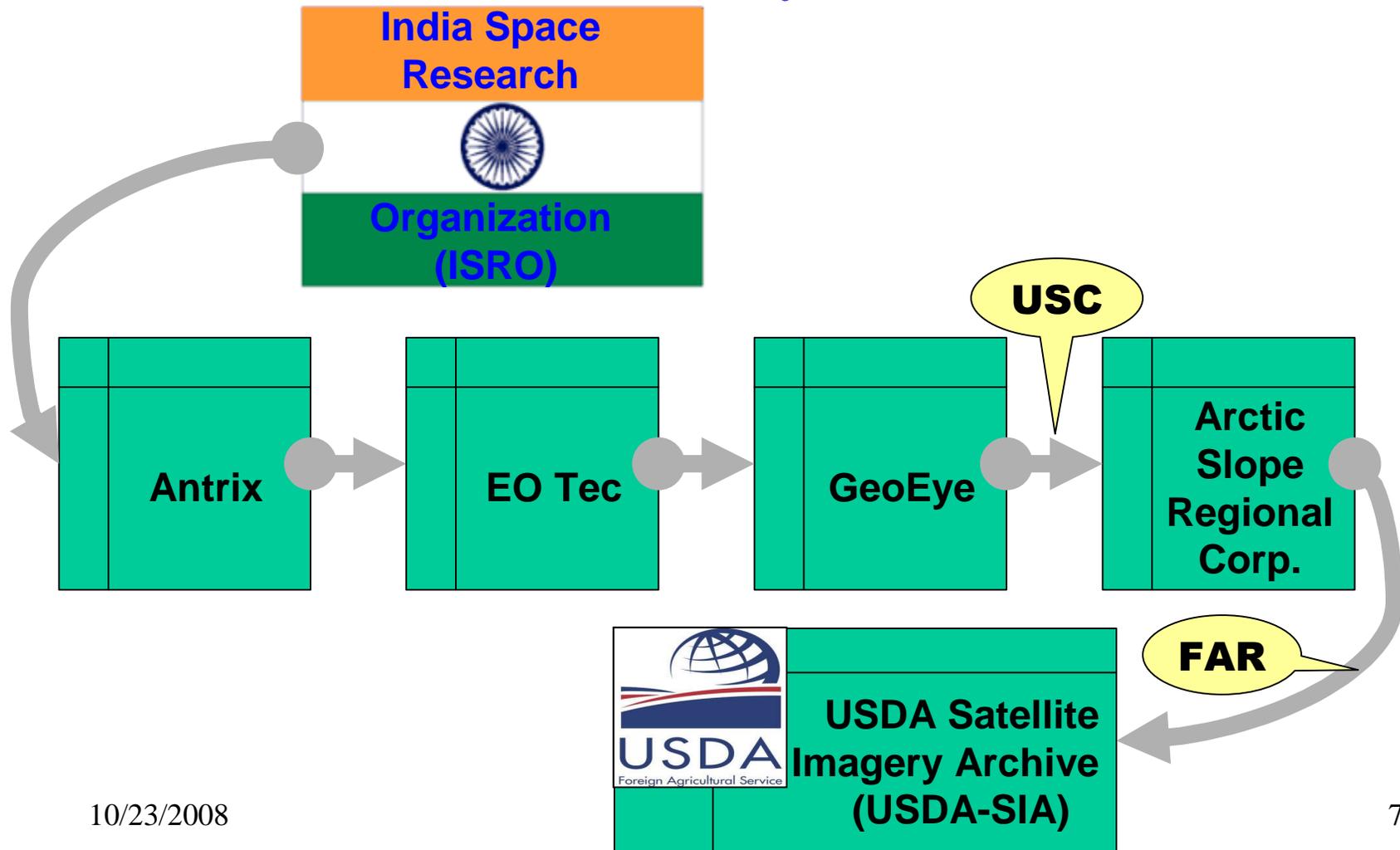


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Key Characteristics for Satellite Systems in support of Operational Agricultural Monitoring

- **Review Sensor** [QUALITY]
 - Sensor characteristics need to be understood by agricultural users.
 - Joint Agency Commercial Imagery Evaluation (JACIE) team or alternative review teams
 - Geometric and radiometric characteristics, and product processing
- **System for Agriculture** [APPLICABILITY]
 - Broad area coverage, rapid revisit, and timely data delivery
 - Spectral bands for vegetation
- **Have Access to a Contract** [ACCESS]
 - Delivery terms, price terms
 - Inexpensive
- **Communicate!** [COMMUNICATE]
 - Continuous sensor review
 - Working relationship with providers
 - Alert to problems

Commercial Channel for IRS Resourcesat-1 Data allows for Purchase by the USDA





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ResourceSat Seminar's Progress

- **2006 ResourceSat Seminar: September 12, 2006**
 - 11 Speakers
 - Data characterizations
 - Geometric corrections
 - Agricultural applications: NASS
- **2007 ResourceSat Seminar: November 27, 2007**
 - *Real Product Innovation*
 - 15 Speakers
 - Data characterizations
 - Radiometric corrections
 - Agricultural applications: NASS, RMA, ARS, Agri-Food Canada
- **2008 ResourceSat Seminar: October 20, 2008**
 - *Integrating Data into Multi-sensor Solutions*
 - 18 Speakers
 - Data characterizations
 - Data Integration
 - Agricultural applications: NASS, RMA, ARS, Agri-Food Canada, USFS, FAS



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Thank You to our Partners!

